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Scyllium spinacipellitum Vaillant, 1888, a senior synonym of *Apristurus atlanticus* (Koefoed, 1927) (Chondrichthyes, Scyliorhinidae)

by Kazuhiro NAKAYA and Bernard SÉRET

Abstract. — The scyliorhinid catshark *Scyllium spinacipellitum* described from deep waters off of the Canary Islands by VAILLANT (1888) is synonymized with *Apristurus atlanticus* (Koefoed, 1927) and the subsequentt nomenclatural problem is defined to be submitted to the International Commission of Zoological Nomenclature.

Résumé. — La roussette *Scyllium spinacipellitum* décrite des eaux profondes des Iles Canaries par VAILLANT (1888) est mise en synonymie avec *Apristurus atlanticus* (Koefoed, 1927) et la conséquence sur le plan de la Nomenclature Zoologique est exposée pour être soumise à la Commission Internationale de Nomenclature Zoologique.

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INTRODUCTION

VAILLANT (1888) described two species of scyliorhinid sharks from deep waters off of the Canary Islands and he temporarily assigned them to the genus *Scyllium* : *S. spinacipellitum* and *S. acutidens*. However, these species names have rarely been used and their taxonomic identities remain ambiguous. We examined the type specimens of these two species in the Muséum national d'Histoire naturelle, Paris, and hence we can identify *S. spinacipellitum*. This paper will discuss the taxonomic identity of *S. spinacipellitum* and define its nomenclatural problem.

MATERIALS EXAMINED

Institutional acronyms follow LEVITON *et al.* (1985).

S. spinacipellitum Vaillant, 1888 : holotype MNHN 1884-384, from waters off of the Canary Islands at a depth of 975 m, 126.0 mm TL, immature male;
Aspriturus atlanticus (Koefoed, 1927) : holotype ZMO 3203, from waters off of the Canary Islands, 247.0 mm TL, immature male;
Apristurus brunneus (Gilbert, 1892) : holotype USNM 51708, from off of La Jolla, California, USA, 487.0 mm TL, male; 70 specimens in HUMZ, from Californian waters, 130.0-648.0 mm TL, 44 males and 26 females;

Apristurus canutus Springer and Heemstra, 1979 : holotype USNM 206176, from the Lesser Antilles, 451.0 mm TL, female; paratypes USNM 206180 (4 specimens), from the same locality as the holotype, 318.0-433.0 mm TL, 3 males and 1 female;

Apristurus fedorovi Dolganov, 1985 : 27 specimens in HUMZ, from northern Japanese waters, 320.0-683.0 mm TL, 15 males and 12 females;

Apristurus japonicus Nakaya, 1975 : holotype HUMZ 40082, from Choshi, Japan, 697.0 mm TL, male; paratypes HUMZ 39961, 40075-40081, from the same locality as the holotype, 626.0-711.0 mm TL, 7 males and 1 female; 8 uncatalogued specimens in HUMZ, from Japanese waters, 457.0-705.0 mm TL, 6 males and 2 females;

Apristurus laurussoni (Saemundsson, 1922) : holotype NHMR without catalogue number, from waters off of Icelands, 663.0 mm TL, adult female;

Apristurus maderensis Cadenat and Maul, 1966 : holotype MMF 18750, from waters off of Madeira, Portugal, 665.0 mm TL, adult female;

Apristurus manis (Springer, 1979) : holotype MCZ 38299, from waters off of Massachusetts, USA, 390.0 mm TL, female; paratypes MCZ 37416 (2 specimens), 37512 and 37535, from the same locality as the holotype, 227.0-255.0 mm TL, 3 males and 1 female;

Apristurus parvipinnis Springer and Heemstra, 1979 : holotype USNM 206178, from the Gulf of Mexico, 472.0 mm TL, male; paratypes USNM 206179, 220969, from the Caribbean and the Gulf of Mexico, 403.0-466.0 mm TL, females;

Apristurus profundorum (Goode and Bean, 1895) : holotype USNM 35646, from waters off of Delaware Bay, USA, 510.0 mm TL, male;

Apristurus riveri Bigelow and Schroeder, 1944 : holotype MCZ 36092, from waters north of Cuba, 413.0 mm TL, female.

Description of *Scyllium spinacipellitum* holotype

The holotype of *S. spinacipellitum* is in very bad condition (fig. 1). Proportional measurements and counts are shown in table 1.

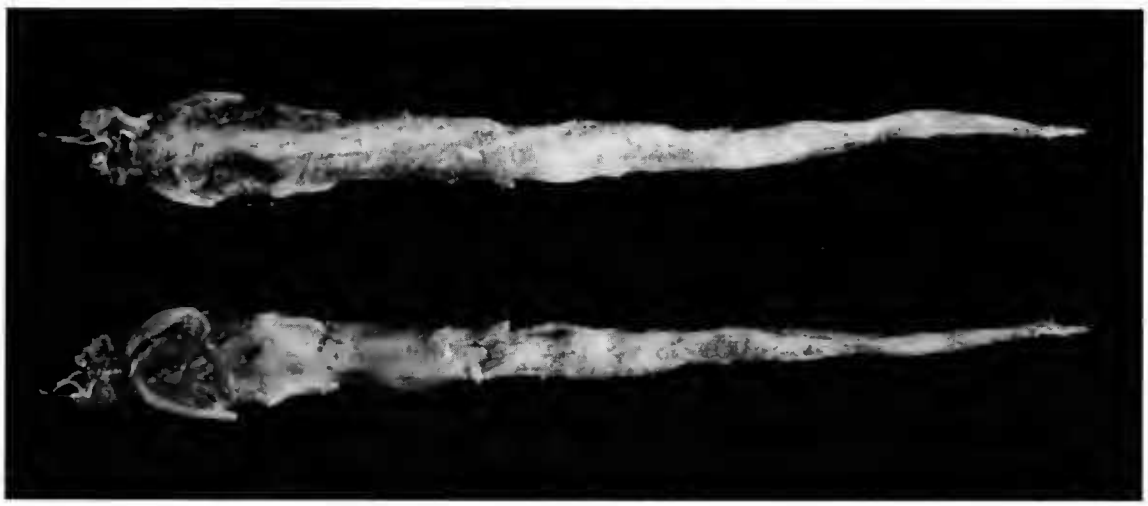

Fig. 1. — Dorsal and ventral views of *Scyllium spinacipellitum* holotype, MNHN 1884-384, immature male of 126 mm TL.

TABLE 1. — Proportional measurements in percentage of the total length and counts in the holotypes of *Scyllium spinacipellitum* and *Apristurus atlanticus*.

	S. spinacipellitum	*A. atlanticus*
Catalogue number :	MNHN 1884-384	ZMO 3203
Total length (mm) :	126.0	247.0
Sex :	male	male
Snout tip to :		
1st dorsal fin origin	45.4	47.0
2nd dorsal fin origin	59.8	60.0
lower caudal fin origin	65.5	65.6
pelvic fin origin	38.9	39.7
pectoral fin origin	22.2	21.7
anal fin origin	40.8	51.0
cloaca	44.4	44.1
Interspace between :		
1st and 2nd dorsal fins	9.1	9.2
pectoral and pelvic fins	11.1	10.6
Distance between origins of :		
pectoral and pelvic fins	16.7	17.0
Length of fin base :		
1st dorsal fin	5.7	6.2
2nd dorsal fin	6.7	6.5
anal fin	15.6	14.9
Caudal fin :		
lower lobe origin to rear tip	34.5	33.0
Counts :		
monospondylous centra	42	43
spiral valve turns	17	18

The head is badly damaged and the chondrocranium is exposed. The skin is almost totally scraped off the head region. The three rostral processes are very long. The supraorbital crests are absent. The antorbital process is rather long and tongue-shaped and the postorbital process is a small projection from the otic region. The ceratotrichia are lost from all the fins except the caudal fin and only radial cartilages are present on the fins. The first dorsal fin originates above the posterior end of the pelvic base and its base ends slightly behind the level of the anal fin origin. The second dorsal fin originates above the middle of the anal fin base and the base ends above the posterior end of the anal fin base. The anal fin base is very long, it originates below the posterior part of the first dorsal fin base and ends just in front of the lower caudal fin origin. The caudal fin is long, with its lower caudal origin almost touching the anal fin end. The caudal crest of enlarged dermal denticles is absent from both the upper and the lower margins of the caudal fin. The teeth are almost all lost from both of the jaws, but the upper teeth have three cusps and the lower teeth have three to five cups. The dermal denticles are sparse and needle-shaped.

Discussion

In the original description of *S. spinacipellitum*, Vaillant (1888) discussed the possibility that the species was a member of an orectolobid genus. However, the position of the first dorsal fin, which is located behind the pelvic fin origin, the tri-raminate rostral process and the long-based anal fin, clearly indicate that *S. spinacipellitum* is not an orectolobid, but rather a scyliorhinid shark. Fowler (1967) questionably included *S. spinacipellitum* in the synonymy of *Scyliorhinus canicula* and Compagno (1984, 1988) followed this synonymy, however no species of *Scyliorhinus* has the characteristics described above. The combination of these characters clearly indicates that *S. spinacipellitum* is a species in the genus *Apristurus*.

There are ten nominal species of *Apristurus* found in the Atlantic Ocean, i.e. : *A. profundorum* (Goode and Bean, 1895) from waters off of Delaware Bay; *A. laurussoni* (Saemundsson, 1922) from Iceland; *A. microps* (Gilchrist, 1922) from South Africa; *A. saldanha* (Barnard, 1925) from South Africa; *A. atlanticus* (Koefoed, 1927) from the Canary Islands; *A. riveri* Bigelow and Schroeder, 1944, from Cuba; *A. maderensis* Cadenat and Maul, 1966, from Madeira, Portugal; *A. manis* (Springer, 1979) from waters off of Massachusetts, USA; *A. parvipinnis* Springer and Heemstra, 1979, from the Gulf of Mexico; and *A. canis* Springer and Heemstra, 1979, from the Caribbean.

S. spinacipellitum has 17 spiral valve turns in the intestines and it is apparently different from *A. profundorum, A. riveri* and *A. manis* because these three species have only 10 or fewer spiral valve turns. *S. spinacipellitum* has 42 monospondylous centra versus 34-36 in the type series of *A. canutus* and 37-39 in that of *A. parvipinnis*. These facts appear to be the specific differences between *S. spinacipellitum* and these two american species. Examination of additional specimens of *A. canutus* and *A. parvipinnis* in the USNM reinforces this conclusion : seven specimens of the former species have 33-36 monospondylous centra and 18 specimens of the latter species have 38-40 centra. Springer (1979) also observed 33-36 and 37-40 monospondylous centra for these species, respectively. Type specimens of *A. microps* and *A. saldanha* are lost and any specimens of these two species could not be examined. According to the original illustration by Gilchrist (1922), the first dorsal fin begins above the pelvic base in *A. microps*. In *A. saldanha*, the first dorsal fin arises above the vent as stated by Barnard (1925) and hence the first dorsal fin origin is located above the pelvic base. On the holotypes of *A. laurussoni* and *A. maderensis*, the first dorsal fin origin is also above the mid-point of the pelvic fin base. In *A. brunneus, A. japonicus* and *A. fedorovi* wherein the first dorsal fin origin is typically located above the pelvic fin base, 118 of 120 specimens examined had the first dorsal fin origin clearly above the pelvic fin base and only two specimens had it above the posterior end of the pelvic fin base. Hence the fin position is reliable in most cases for the identification of these species which have the first dorsal fin origin clearly above the pelvic fin base. *S. spinacipellitum* however has its first dorsal fin origin just above the posterior end of the pelvic fin base. Therefore, *S. spinacipellitum* is distinct from *A. laurussoni, A. microps, A. saldanha* and *A. maderensis*.

On the other hand, the holotype of *A. atlanticus* has the first dorsal fin origin just above the posterior end of the pelvic fin base. As shown in table 1, *A. spinacipellitum* and *A. atlanticus* almost have the same number of spiral valve turns (17 vs. 18 respectively) and

monospondylous centra (42 vs. 43). More measurements of *S. spinacipellitum* could not be taken because of its very poor condition, however the proportional measurements that were taken are considered to be within the range of variation for *A. atlanticus*. No character argues against the conspecificity of *A. atlanticus* and *S. spinacipellitum*. In addition, the type locality for *S. spinacipellitum* and *A. atlanticus* is the Canary Islands which strengthens the conclusion. Hence we conclude that *S. spinacipellitum* is a senior synonym of *A. atlanticus*.

Although *S. spinacipellitum* has priority versus *A. atlanticus*, the name *S. spinacipellitum* has never been used since 1888 with a few exceptions : BERTINS's 1939 catalogue of type specimens in the Muséum national d'Histoire naturelle, Paris, mentioned the name in a footnote related to the genus *Pristiurus* (= *Galeus*). FOWLER (1967) questionably included *S. spinacipellitum* in the synonymy of *Scyliorhinus canicula* and this opinion was admitted by COMPAGNO (1984, 1988) without any explanation. We could not find any other literature citations to this name. On the other hand, the name *A. atlanticus* has often been used in the literature, i.e. : BIGELOW and SCHROEDER (1944, 1948); BIGELOW, SCHROEDER and SPRINGER (1953); CADENAT and MAUL (1966); FOWLER (1967); SPRINGER (1966, 1979); TAYLOR (1972); NAKAYA (1975); CADENAT and BLACHE (1981); COMPAGNO (1981, 1984, 1988) and GUBANOV, KONDURIN and MYAGKOV (1986). Though the use of *A. atlanticus* as a valid name for this taxon is in conflict with the Principle of Priority in the International Code of Zoological Nomenclature, the use of the specific name *spinacipellitum* will cause confusion and affect the stability of zoological nomenclature. Hence an application to suppress the scientific name *S. spinacipellitum* for the purpose of maintaining nomenclatural stability is being made to the International Commission on Zoological Nomenclature.

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